



THOMAS G. NEWMAN,
EDITOR.

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EDITORIAL BUZZINGS.

Express Charges are often exorbitantly high, and complaints are many concerning them, by those who get goods sent in that way. We notice that a bill has been introduced into the United States Senate, the object of which is to so amend the Inter-State Commerce Law so that all Express Companies shall be placed under the provisions of that law. The Express Companies should certainly be placed under restraint—just as reasonably as the Railroad Companies. We should like to see a law passed allowing the Post-Office to transmit parcels of all kinds at reasonable rates. That would bring down the express charges in a hurry.

Judge W. H. Andrews, of McKeaney, Texas, is reported to be very ill. This we regret to learn, and offer our sympathy to the Judge, and hope for a speedy recovery. The Texas State Bee-Keepers' Association, of which he was one of the projectors, at its late meeting on the 7th inst, unanimously passed the following resolutions of sympathy:

The Texas Bee-Keepers' Association, now in session, have heard, with deep regret, of the severe illness of Judge W. H. Andrews, one of the oldest and most influential members of this Association, and who has contributed more than any other to its success, and therefore be it

Resolved, That, as an Association, we deeply sympathize with him and his family in their deep affliction, and hope that his useful life will be spared; and

Resolved, That a copy of these Resolutions be sent to him, as a memento of our remembrance of him and our sympathy in this hour of affliction, hoping for his recovery. Adopted.

W. R. GRAHAM, Pres.
J. N. HUNTER, Sec'y.

Greenville, Texas, May 7, 1890.

The Prospect now is excellent for a good crop of honey, if no further set-back is in store for us. It has been cold for May, but by the time this JOURNAL is in the hands of its readers, it will probably be warm and pleasant, and summer will have set in for good. Mr. C. H. Dibbern, in the *Western Plowman*, reports thus for northern Illinois:

In this section the clover crop is now entirely safe, and the stand is exceptionally good. Everything else also promises well, and with good weather and prudent management, we ought to produce a large crop of very fine honey.

There is a time of scarcity in many places after the fruit blossoms have disappeared. It is a very good plan to do a little feeding at that time, although the bees have honey enough to last until the clover begins to blossom. When breeding is going on rapidly, the stores are being consumed at an astonishing rate, and if honey is not coming in, the queen soon takes the alarm, and laying eggs is greatly diminished. It must be remembered that now is the very time that we want all the brood, in all the hives, that we can possibly get there.

Protecting Bees in the Spring.

—Prof. A. J. Cook remarks as follows on this subject in the New York Tribune of last week:

There is no longer any doubt that bees do better, if, when removed from the cellar, in our northern latitudes, they are protected by a double-walled hive; or else, when set out in the spring, a box (somewhat larger than the hive) is set around the hive, and the space between—3 or 4 inches—packed with chaff, shavings, excelsior, straw, hay, or other like substances.

I do not want a hive that one person cannot easily handle or carry, even when the bees are in it. Thus I am an opponent to chaff hives, which are expensive to buy. Yet we must be able to accomplish all that the chaff hive will secure, as we set our bees on the summer stands in the spring.

From our experience here at the Michigan Experiment Station, last year and this, I feel sure that every bee-keeper with single-walled hives can well afford to make special cases, or boxes, to set around the hives.

We made 20 such cases this spring at a cost, cover and all, of less than \$1.00 each. From appearances to-day, these protected colonies are breeding so rapidly that their added strength will secure more than a dollar's worth of honey above that which we will secure from the unprotected bees. Why, then, make chaff hives?

This box is neat, costs less, does as well, and when the season opens can be put aside in some dry place until late autumn, or even until spring, if we winter our bees in cellar.

Then during the usual honey season we have the light hives, which are just as valuable for service, and are very easily handled or carried. We make these cases neatly, and nail them slightly, so that at the close of the chilly weeks of spring, we can pack them away in the "knock down." Thus they take but little room in summer.

To Beginners, Mr. G. M. Doolittle gives the following sensible hints in *Rural Homes*:

Never undertake to keep many bees until you have become familiar with their

nature and habits. Where a person who has no previous knowledge invests largely in bees, the sequel almost always shows that an entire loss of this investment is the result. Indeed this is likely to be the result in almost any pursuit in life, yet in no other calling is a little knowledge as necessary as in bee-keeping. Many do not seem to realize how fast bees increase, even if they are no more than doubled each year. If 2 colonies are bought to start with, 512 would be the number possessed at the end of the seventh season, or 1,024 at the end of the eighth. Thus it is that the bees increase as fast as does the knowledge of the owner.

The Trembling Bee-Disease.—We have received the following questions, with the request that they be answered in the BEE JOURNAL:

We are having a very bad spring for the bees in Vermont. Cold and windy days have dwindled the colonies so that they are weak in numbers. A good many colonies have died in this vicinity, with plenty of honey in the hives. I have lost 25 of my best colonies with the "nameless bee-disease," after doing my best to save them. I have 200 frames of worker-combs, clean and nice, that I shall use for new swarms. Please answer the following questions:

1. Will it be safe to use combs for new swarms, that are taken out of hives that the bees died with the nameless disease?
2. How would it work to dip the combs in strong brine, as salt as it can be made?
3. Will the bees carry the disease from one hive to another?
4. Will poor honey have the tendency to bring on the nameless or trembling disease?

C. A. MARSH.
Sharon, Vt., May 9, 1890.

1. Yes; the bees will clean them up. There is nothing contagious about that disease.

2. It would do no harm to the combs, but it is not at all necessary. Salt is used for the cure of the disease in the bees.

3. The bees, being diseased, communicate the disease to other bees under certain circumstances. A queen from a diseased colony, when placed in a colony perfectly healthy, communicated the disease to the bees in a very short time.

4. Yes; that has been the experience of many.

The following letter refers to the same disease:

I want to ask a few questions about the "nameless" or "trembling" disease. Is it contagious? Is it best to remove affected colonies? Mr. Christie, of Smithland, told me that he at one time had a whole apiary badly affected with the disease, and that he got but little honey from them. He killed them all in the fall; he does not know whether it is contagious or not. I had several colonies affected last year, and during the basswood honey-flow they became all right, to all appearances. The affected ones were all near together. Now this spring the disease appears again, in about the same number of colonies, but in different parts of the apiary—I rather think that they are the same colonies that were affected last year. Is there any danger of the other colonies getting the disease? I have a notion to move every affected colony to a separate yard.

C. J. BARBER.
Rodney, Iowa, May 10, 1890.

See answer to Mr. Marsh's letter, and an article from Prof. Cook on page 353.

GLEAMS OF NEWS.

The World's Fair Apiarian Exhibit.

In answer to the various questions as to what has been done, or what is intended to be done in reference to the apiarian exhibit at the coming World's Fair—Dr. Mason has sent us the following, to which we call particular attention:

On page 184, Mr. O. S. Compton, in writing of the bee-exhibit at the coming World's Fair, says: "Let us hear from Dr. Mason—what course he intends to pursue," etc., and on page 276, Mr. J. E. Pond asks, "Has any stir, as yet, been made in regard to 'bee-exhibits' at the World's Fair?" and the editor partially answers.

Knowing that it is a good plan to be on hand in good time in Fair and Exposition matters, as President of our International Bee-Keepers' Association, I wrote to the presidents of the committees on the World's Fair, in both Chicago and New York, as soon as the committees were organized, suggesting that provision be made for an exhibit of everything used in connection with bee-keeping, and a grand exhibit of honey; and in my address at the International Convention at Brantford, last December, I reported what I had done. By a resolution, introduced by Mr. C. P. Dadant, I believe, I was recommended by the Association as Superintendent of the Bee and Honey Department at the World's Fair. The Michigan and New York State Bee-Keepers' Associations have also made the same recommendations.

Gratifying responses have been received from the committee in charge at Chicago, in regard to the exhibit, and when the proper time arrives for making plans, the interests of our industry will be looked after. In the meantime, and as soon as possible, I shall be pleased to have persons interested in the success of the exhibit, whether they intend to exhibit or not, write me, making such suggestions as they may think best, so that the best plans and methods may be adopted for making the exhibit a credit to the fraternity, an honor to the Nation, and by far the grandest ever made anywhere.

Nothing definite has yet been concluded upon, and will not be until the complete organization of the management under the provisions of the World's Fair Bill, as recently passed by Congress; but our plans should be all ready to present when called for.

I have thought of recommending that all exhibits of honey be grouped together, and that supplies be in another group near the honey, and that each foreign country, and each of the United States be assigned a certain space, and, if so desired, each country and State have a Superintendent, who shall be assistant to the General Superintendent, the assistants to have charge of the exhibits from their own locality, and receive, put in place and care for such articles as may be sent for exhibition, and are not accompanied by the owner or exhibitor. The Assistant State Superintendents to be appointed (on the recommendation of the State Bee-Keepers' Association) and paid by the State making the appointment.

As soon as definite arrangements are made, they will be made known through the bee-periodicals. I have already received letters of inquiry in regard to this matter, and I would like to make a suggestion. It is, that all making inquiries will give their post-office address, sign their names to their letters, and each enclose a stamp for reply. As I "work for nothing

and board myself," this does not seem an unreasonable request. I received a letter the present week with the name of the State left off, and if the post-master had been careless with his stamp, I should probably have been blessed by the writer for not replying.

I wish that all who intend to exhibit would let me know soon about how much space they will probably need—that is, about how many square feet of floor surface. At the Ohio Centennial in 1888, there were six principal exhibitors who occupied an average of over 230 square feet each, one using 70 square feet, and Mr. A. I. Root's exhibit was crowded, although he had about 400 square feet.

The States of Minnesota, Iowa, Illinois, Wisconsin, Indiana, Michigan and Ohio ought to average more than 1,000 square feet each, to say nothing of other States that will exhibit less, or even more, than either of the above named.

And then, in addition to this, I am thinking that perhaps our friend, Mr. R. Mc Knight, will be on hand, backed by a galaxy of Canadians, and give us "Yankees" a pretty close call for the honors.

What honey is to be exhibited will, of course, have to be secured before 1893, for the Fair will probably open about May 1. I have been corresponding with some of the best honey exhibitors, and shall write to others to get their views as to the best methods to pursue.

I would like to suggest to such of the readers of the AMERICAN BEE JOURNAL as are botanists, that they begin at once to gather and prepare for exhibition such honey-plants as grow in their locality. All such plants could be put in one group and make a grand display, or they could be used to decorate the exhibit coming from the State or country that the plants come from. Perhaps it would be a good plan to have the plants all mounted alike, and I will try and secure the services of a good botanist to give proper instructions in preparing and mounting them, to all who desire, or are willing to do so, if they will address me, with stamps for reply.

Of course each State and Country should have a large sign over its exhibit, and each exhibitor should also have his name over his exhibit. Lay plans now for 1893, and "have an eye out" for anything that will help make a success of the honey exhibit. Now send on the suggestions, and let us work together to make the exhibit a grand success. Do not say that there is plenty of time yet, and put off to some future time what you have to say.

A. B. MASON.

The suggestions of Dr. Mason are "timely and good," and they should call out an abundance of suggestions from all who intend to make exhibits in the apiarian department of the Columbian Fair in 1893. Begin early to make arrangements, and then make the display the largest and most complete ever made in the world, and creditable for a great and progressive fraternity.

The Hen that was near-sighted, and accidentally swallowed a bee, was not long in concluding that hers was a "peck" of trouble. It must have been a case of "hen-pecked" bee, that time.

The Catalogue of W. T. Falconer Mfg. Co., Jamestown, N. J., contains 24 pages, and a full list of Apiarian Supplies.

The Effect of Honey on the human system was thus stated by Prof. Frank R. Cheshire, F.R.M.S., in a lecture before the Institute of Agriculture at South Kensington, London, England:

All foods, if not already soluble (meltable) in water, such as bread, etc., have to be so altered within us that they become dissolved, and we call this solution digestion. Honey, on the contrary, or the sugar that we find in grapes, is already in the condition for absorption or assimilation, and really no kind of work has to be performed upon it before it is actually rendering us service as a force or heat producer. If honey, then, as a food be a giver of warmth to the system, a quickener of nervous and muscular energy, and a supporter of all vital functions, how important it is that it should be obtained in a pure condition.

Honey contains sugar in the form most suitable to assimilation. On this account it is desirable to take it in combination with some less readily absorbed material. Bread and honey has a time-honored memory, and is a combination as agreeable to sound physiology, as it is to the sense of taste. Children with rapidly developing frames and irrepressible activity, instinctively feel the value of sugars, and amongst these, honey takes a place second to none so far as the needs of the frame are concerned, whilst its aroma gives it first place on the list. The presence of a minute quantity of an animal acid, lend in addition a medicinal value, which in cases of sore throat and some other ailments is well-nigh universally recognized, while the Medical Council of Great Britain recommend the use of honey in no less than seven distinct pharmaceutical preparations.

Complimentary Words.—Here are some of the newest expressions of satisfaction from our patrons:

I have received the seed. Well, to tell the truth, if a man could get supplies that quick, when he wanted them, it would save lots of money, and hard words, too.—C. K. READING, Davenport, Iowa.

The Singer Sewing Machine you sent me, does splendid work. I am well pleased with it.—G. RUFF, Burlington, Iowa.

My bill of goods I ordered from you reached me all right and in good condition —everything as I ordered.—ROBT. HARVEY, Aurora, Ills.

During the year 1888, we had an advertisement running in the American Bee Journal, and we had the same in several Daily and Weekly papers, but to our surprise we received more than double the number of responses from the advertisement in the American Bee Journal, than from all our others combined.

The fact that we are still receiving letters referring to our advertisement in the Bee Journal, shows that it is preserved and read long after it is received. Newspapers are read and thrown aside and that ends it, but the Bee Journal is preserved, and the advertisements are often noticed and bring responses long after they appeared in it.

We regard the American Bee Journal as a first-class advertising medium.

Cedar Rapids High-Speed Engine Co.,

HENRY RICKEL, President.

We always extend the term of renewal subscriptions from the date of expiration on our books. Present subscribers whose time may expire one, two, three or six months hence, can safely renew now, without fear of loss thereby.

Honey for Dyspeptics.—The New York Tribune of May 7, has the following item under its agricultural heading :

A correspondent of *Gleanings in Bee-Culture* queries as to whether dyspeptics, or those with whom "honey doesn't agree," ever tried heating extracted honey to the boiling point before eating. He (weak of digestion) found he could use it in this way with less unpleasant after effect. However, certain persons cannot seem to indulge in this luxury without annoying result, though they might, perhaps, by slow degrees, school the stomach to accept of it, and in some cases it is probably the swallowed comb that makes the trouble.

We should advise the use of milk, when the honey disagrees with a weak stomach. Milk assists digestion, and drinking either sour milk (clabber) or butter-milk, is very beneficial in cases of indigestion. It simply tones up the stomach, while the use of honey will give warmth to the system, arouse nervous energy, and give vigor to all the vital functions. Milk and honey are grand things for poor humanity.

Susquehanna Co. Convention.—The report of the recent meeting of this bee-association is thus condensed by the Secretary:

The Susquehanna County, Bee-Keepers' Association met at Hopbottom, Pa., on May 3, 1890, and various subjects pertaining to bee-culture were discussed. H. H. Brown, of Columbia county, being present by invitation, cheerfully answered any questions which those present saw fit to ask. The following officers were elected for the coming year : President, E. B. Smith, of New Milford; Vice-President, C. J. Haight, of Rush; Secretary and Treasurer, H. M. Seeley, of Harford. The following is the number of colonies in the fall and spring, as represented by those present:

	Fall.	Spring.
W. Johnson Baker	54	54
W. A. Green	38	34
S. A. Shook	52	51
P. R. Phillips	7	7
Manley Mackey	7	7
D. C. Westbrook	11	11
C. E. Snyder	38	37
A. S. Taylor	42	40
E. P. Mack	8	8
John Buck	15	14
Bela Griffin	75	75
H. M. Seeley	24	22
Mrs. N. Conrad	39	38
C. J. Haight	173	170
E. B. Smith	44	41
A. G. Brush	90	90
G. A. Wright	175	135
F. W. Dean	81	75
G. W. Tiffany	40	40
T. J. Tiffany	17	17
C. D. Bennett	39	38
Harford, Pa.		
H. M. SEELEY, Sec.		

We want of Volume 2 of the AMERICAN BEE JOURNAL—July, 1866, to June, 1867. Any one having it for sale may send us a postal card, saying what he will take for it. Do not send any numbers before we order them, for we only need one set.

Clubs of 5 New Subscriptions for \$4.00, to any addresses. Ten for \$7.50, if all are sent at one time.

QUERIES & REPLIES.

Fastening Foundation in Brood-Frames and Sections.

Written for the American Bee Journal

QUERY 708.—1. How do you fasten foundation starters in brood-frames? 2. How do you fasten them in sections?—Penn.

1. By the use of melted wax. 2. By use of the Parker foundation fastener.—A. J. COOK.

1. I fasten them on wires. 2. By means of the Clark foundation fastener.—C. C. MILLER.

1. I have never used starters in brood-frames ; with us, it has been full sheets or nothing. 2. With melted wax.—Mrs. L. HARRISON.

1. I use wired frames altogether, and have no trouble. 2. I fasten in what few sections I use with the little Parker fastener.—J. E. POND.

1. By the use of the Eclipse foundation fastener. See Dadant's revision of Langstroth's book, page 375. 2. The Gray foundation fastener is preferable to any that I have seen.—J. M. HAMBAUGH.

1. We use full sheets in our brood-frames, and fasten them in with melted wax and rosin. 2. We use a Giwits press for fastening full sheets of foundation in sections.—C. H. DIBBERN.

We use a common pocket-knife, using a slot to guide the knife; or better, we use the Hambaugh roller to press it on. Every bee-man has his own way.—DADANT & SON.

1. By pressing firmly the foundation against the triangular comb-guide. I have all my frames with this guide. 2. Have a pan of melted wax at hand to dip the edge of the starter in, and then apply to the section. With me, this plan is more satisfactory than the foundation fastener.—J. P. H. BROWN.

1. I make my foundation on wired frames, in a Given press, and run melted beeswax along the top-bar to make all secure. 2. With a Parker fastener; but if I made a business of producing comb honey, I would use Clark's, as recently improved.—A. B. MASON.

I have a contrivance of my own for fastening foundation in frames and sections, which I prefer to any other that I have seen. By it the wax is melted at the edge, and suddenly crowded against the wood. If done with any care at all, the fastening is perfect. In brood-frames I use wire, in addition.—R. L. TAYLOR.

1. The top-bar has a saw cut $\frac{1}{8}$ of an inch deep; the foundation is placed in this slot, and fastened with melted wax and rosin. 2. For sections, I use a machine that fastens the foundation with a hot iron; with it, starters or whole sheets can be put in faster, better and cheaper than by any other way that I know of.—H. D. CUTTING.

1. In doing this, I have a block just half the width of the frame, which will just fit inside of it nicely. Then I have a thin but strong knife (made of some hard variety of wood), with which the foundation is firmly pressed against the thin strip of wood, which projects from the top of the frame. The foundation should be kept in a warm place until used; and the knife occasionally dipped in honey. 2. For sections, I use, with perfect satisfaction, the Parker foundation fastener.—WILL M. BARNUM.

1. Sometimes in one way, and sometimes in another. Usually, by laying the foundation flat on the under side of the top bar, and tacking on it a thin strip of wood, and then bending the foundation against the edge of the strip, so that it will hang perpendicular. 2. By dipping the edge of the starter in a melted mixture of beeswax and rosin.—M. MARIN.

1. I use a frame-holder to keep the frame in proper position, and press the edge of the starter fast to the top-bar with a common putty-knife. The starter is then bent to the proper position. Full sheets are fastened in the same way, except they are treated to warm wax on the opposite side, to prevent the tendency to peal off when weighted with bees. 2. I use an improved "Parker fastener," of my own devising, that does the work effectively and rapidly.—G. W. DEMAREE.

To fasten foundation in brood-frames or sections, and do it expeditiously, requires skill and practice by any method to do it as it should be done. If there is a more rapid, economical, or better method than the one given in my new book, by the use of melted beeswax and a suitable camel's-hair brush, I should like to know it. At all events, fastening the foundation in 200 sections per hour is fast enough.—G. L. TINKER.

1. If whole sheets are used, wired frames are best. If only starters, melted beeswax used as with sections. 2. I have tried various foundation fasteners, but never any plan has succeeded better than a basin of melted beeswax kept at the proper temperature over a lamp. A block half as thick as the section is wide, and nearly as large as the section when folded, nailed on a larger one. A small brush is kept in the melted wax. With one stroke, the starter can be fastened in so thoroughly that not one in a thousand falls. The work can be done quite rapidly, too.—EUGENE SECOR.

I have always fastened foundation starters in brood-frames with a putty-knife. My employer will put on from 75 to 100 per hour, and put them in nicely. We have a little wooden form fixed to support the frame just right, and adjust the foundation to the right place in the frame. Probably, if I was beginning in the business, and using foundation-guides, rather than full sheets on wires, as I do use, I should use a large fastener, made upon the lever principle, the same as the Parker, which is the one we use for putting foundation in sections. Right here let me digress to say, that a foundation-guide 4 or 5 cells wide, before it is mashed on, and 3 or 4 cells after being mashed on, is much better than a guide 2 or 3 inches wide. Try both ways, and you will see the reason why.—JAMES HEDDON.

1. If the top-bar of the frames is triangular, cut in the upper edge of a pile of the foundation, with a sharp knife about an inch from the top edge, and from one end to the other about 2 inches apart. Then take a sheet and bend each alternate piece thus cut forward, and bend back the other alternate pieces; then these will fit over the thin edge of the V top-bar. Press into the wood with a knife, chisel, or any suitable tool. 2. Use a Parker foundation fastener.—THE EDITOR.

If any one wants a club of two or more weekly or monthly periodicals, besides one or both of our Journals—send us a Postal Card, and we will then quote the lowest possible price, by return mail. The number is too great to enumerate.

CORRESPONDENCE.

PRIZE ESSAY.

Extracted Honey—Its Flavor, and How to Secure It.

Written for the American Bee Journal

BY T. F. BINGHAM.

The first requisite of extracted honey is that peculiar to all fine honey, whether extracted or in the comb, namely, delicious flavor. It is not because honey is so sweet, that honey is so sought after, neither because so beautiful, but from its peculiar flavor.

It is true that those buying honey buy that which is the lighter in color, but the color is used as a number, trade-mark, or brand, the association of which with the taste of the purchaser is linked that most fascinating odor and combination of acids and sweets upon which is based true epicurean taste.

Once master of those qualities and combinations found alone in honey, a high degree of excellence in the commodity can alone maintain its lofty position as a dainty luxury of the most appetizing kind.

It is not too much to state that honey, as honey, does not always meet the gastric delight anticipated by the purchaser. It is this disappointment that has brought extracted honey to its market rate, and widened the measure of values between honey in the comb and combless honey.

Having touched at a few salient points relative to the reasons why honey holds a higher market value than sugar—that merely sweet commodity, so much prized because it has nothing to render it more than a culinary necessity—it may be well to state that while sugar is simply sweet, that is its greatest recommendation as an essential in cookery. Had it flavor, however delicate or peculiar to itself, yet no greater or more delicate than the choicest honey in the comb, it would be objectionable as a sweetener.

The delicate flavor of that most-prized table luxury—tea—would be obliterated by the stronger flavor of the sugar, and tea would become to all as it now is to the older users of it—only prized when not sweetened. Thus it will be observed that only the deodorized or granulated sugars are used to sweeten coffee or tea.

With the foregoing carefully kept in mind, the easy analysis of those peculiarities found in the choicest comb honey, which exalt it so high in the realm of pure and healthful luxuries, will be at once understood. I shall

not attempt to explain in detail why "extracted honey" as a phrase has failed to touch the public heart as a term or phrase signifying honey; I do not mean to be understood that "extracted honey" is adulterated, or that it ever has been, but that, as a rule, without adulteration it signally fails to make for itself a perennial market.

Careful effort has led me to regard the extracted-honey market as an appendage due to comb honey, which has, in spite of every and all efforts, maintained in the public mind a realization of the old and oft-repeated quotation—"Sweeter than honey and the honey-comb."

To those not expert in the kinds or varieties of honey, a clear and distinct conception of it cannot reasonably be supposed to exist, hence the easy and natural confidence reposed in that sweet word "honey!"

While the innocent purchaser does not feel that he has been imposed upon or deceived in his purchase, he does not fail to realize that either honey differs, or the tastes of its devotees differ widely from his.

I will now use a parallel industry and some of its methods, to illustrate in part how this thing that we have so long tried to show is not strained honey, does not help us to explain. The cane-planters of Louisiana understand perfectly well what portion of the blue cane makes the refined sugar; also that the very hour and moment that the sweet juice is pressed from the air-tight stalk, that juice must be boiled, else it will yield very little refined sugar.

The careful analysis of the expert methods of maple sugar manufacturing, demonstrates how valuable is time, and how fatal the exposure of sap before boiling, in the production of a strictly No. 1 sugar. Yet we notice bee-writers advocating the extracting of honey before the combs are sealed, and exposing this "green" nectar in open vessels to undergo evaporation without heat in order to ripen. What would a sugar maker say of such advice? What sage has succeeded in finding out in what respect the juice of flowers differs from the juice of the cane or the sap of the maple?

I assume without fear of controversion, that until the same rational methods are brought to bear upon the production and management of combless honey, that obtains in the management of cane and maple sugars, there will remain the same reasonable distaste for "extracted honey," and the same futile effort to show that extracted or fluid honey is not "strained honey," that has clung to the liquid article

ever since the invention of the extractor.

Musicians sometimes have recourse to a little simple instrument to enable them to judge of tone, or to place their voice or instrument in the proper key; if those, who wish to determine accurately the quality of combless honey, will obtain a choice one-pound section of clover honey—all *sealed*—and after taking it from the section pare off that portion of the comb which joins the section on all four edges, so as to remove every possibly unsealed cell; then place the remaining comb in a thin, clean strainer-cloth, and hang in a warm place until the whole is warmed to a point at which the honey will run freely, and then crush the comb and press out the honey at once, they will have a test or "tuning-fork" by which to judge of the character and flavor of combless honey. If, then, it should be desired to keep or preserve for future reference this standard, place it in a vial which it will completely fill, cork tightly, and place in a cool, dark place.

Now, whenever a doubt exists as to whether liquid honey is as good as it is possible to have it, sample it beside the test, and decide by the standard. I need not say that such honey would soon make for itself a market, and do away with the cry of adulteration, so much used in connection with extracted honey; neither that the market could be glutted with it. Every bee-keeper knows that there could be but one answer.

By the above, first, I trust that it will be understood that good combless honey cannot be obtained by extracting nectar or unsealed honey; second, that combless honey, if properly managed, is simply separated from the comb, and in no sense different; and third, that the degradation of nominally extracted honey in demand and price, is due to its injudicious treatment.

Abronia, Mich.

FOUL BROOD.

Bulletin by the Michigan Agricultural College.

BY PROF. A. J. COOK.

By special request of several bee-keepers, I am led to issue a bulletin upon this the most serious malady that ever attacks bees in this or any other country. The problem of safe wintering, once so important, is now solved, and the intelligent apiarist feels no longer any dread of winter's cold. Foul brood is now the bee-keeper's terror. Like the cholera—a disease which is close akin to foul brood—

among our own kind, so this disease comes into the bee-community like a terrible scourge, and if the bee-keeper is ignorant, incautious, or indifferent, it abides with him until it starves for want of bees on which to feed. Terrible, and terribly fatal as this disease is known to be, experience has proved, certainly, that with full knowledge, and as great care, it can be kept in check, and wholly cured, and that with not very serious labor and expense. The very nature of the disease makes CAUTION the ALL IMPORTANT thing in its management and cure.

FUNGOID DISEASES IN GENERAL.

Foul brood, like the Asiatic cholera, tuberculosis, swine plague, etc., is the result of the growth and development in the animal tissues of myriads of very minute microscopic plants, which are called micro-organisms, or microbes. The disease, like consumption, Asiatic cholera, swine and chicken cholera, etc., which result from the presence in the tissues of such organisms, are called "fungoid," as the organisms that produce them are fungi, which reproduce by division or fission. Thus the little, rod-like or spherical bodies separate into two precisely similar parts, and there are two instead of one organism.

Many animals reproduce in the same way. Some of these also develop round, seed-like bodies, called spores; these are very minute, and, if placed in the proper seed-bed, will again develop into the mature, larger microbes. These spores, the microbes' seed, are exceedingly minute. Thousands might be on dress parade, and yet, so many, shoulder to shoulder, they could not be seen unless the microscope were called to our aid.

Again, they are very persistent. Dried up, they will live for years, may be ages, ready, if properly sown on the right soil, to again produce the swarms of life, that feed on death. Hence the danger; hid by their very minuteness, they come all unrecognized, and find no fences to stay their progress.

The endurance of the spores—often retaining their vitality for years in some dry crevice or corner awaiting in a dried-up dormant condition, the proper conditions (a suitable soil, if we may so speak), when they will develop, increase enormously, and again bring death and disease—also makes these micro-organisms able to work the most dire mischief. Thus the subtle nature of these spores, their invisibility and persistence is what makes the diseases they cause so alarming and so dreaded. They come as still as the death they cause: their very presence is unknown until their fright-

ful work is accomplished. Hence it is that such perfect knowledge, and absolute caution is necessary to combat these fearful plagues.

It is one of the chief glories of Science that she has unveiled the mysteries of these tiny destroyers, and revealed the sword that shall lay them low. These micro-organisms are separated into different groups from their form, etc. Thus the micrococci are globular, and reproduce by division, in which process they assume the form of a dumb-bell. The bacteria are chain-like, or in form of short rods, while the genus bacillus, which includes our foul brood microbe, contains organisms that are in form of straight rods or filaments. The other genus, spirillum, contains spiral forms which move by a curious and interesting augur-like motion. All of these cause decomposition of the material on which they work.

The substances that arise in this decomposition either go to nourish the microbes, or are given off as excreta, just as we excrete carbonic acid in our life economy. Thus in sweet liquids, these cause fermentation, as when cider changes to alcohol and then to vinegar. In meat and other dead animal-tissues they cause putrefaction. Rot then is simply the feeding of countless millions of these micro-organisms on the tissue that is decaying. They cannot work in the absence of spores, heat or moisture. Hence by heating our fruit to kill the spores, and then sealing to keep the spores out; by drying our meat, and by placing it in refrigerator cars, we make it impossible for these microbes to work, and so prevent decay.

The forms that live on live animals and tissues, just as truly produce decomposition, disorganize the tissues, and thus cause disease, may be death. Such are the microbes that produce cholera, consumption, and diphtheria among people, and foul brood among bees.

From the very nature of these micro-organisms we see that it is incumbent on us (would we fence them out) not to introduce the spores, the seeds of these most terrible weeds; to prevent the spread of seeds if the organisms are once introduced; and to destroy the organisms when once they gain a foothold. The first two points—keeping them off and preventing the spread—are the most important. This requires great care and caution; but with full knowledge of all the facts, is doubtless entirely possible.

Thus we have reason to hope and expect, that with fuller investigation, we shall be able to escape some of the very worst maladies that now afflict our race.

WHAT IS FOUL BROOD?

This is the result of the growth and development in the brood of bees, of a bacillus, which has been named by Mr. Cheshire, "bacillus alvei." These bacilli look like short rods, and when magnified 1,000 times, appear about one-fourth of an inch long. Thus we see that they are exceedingly minute—only 1-4 000 of an inch long; and yet the spores are even smaller—from one-third to one-half as long. I have stained specimens taken directly from diseased brood, and from cultures in tubes, where a little of the decayed brood was placed in preparation of beef decoction. In this last case the media in the tube was soon swarming with the bacilli. All look just alike, and just like those from the decaying brood.

If we take a section of a rather small black pin one-fourth inch long, we will have just about the appearance of these stained foul brood bacilli. From what we have already learned by these organisms in general, it is easy to study this special foul-brood bacillus. The minute ovoid spores are brought to the hive probably in honey fed to, or brought in by, the bees. It is easy to see how honey in a diseased colony of bees would receive these spores. It is difficult to see how it could be free from them.

The spores might also be introduced by giving combs containing the diseased brood, or which had previously contained it, to the bees, and so now would have the dormant bacilli or spores. Undoubtedly foul brood is usually first introduced through the honey, while it is often spread rapidly by an exchange of combs in an apiary where only a few of the colonies are affected. While the bacillus cannot develop in the honey, very likely the honey serves admirably to hold and preserve the spores.

APPEARANCE OF THE BROOD.

When the larval bee is once affected, it is disturbed, lies differently in the cell from the healthy larva, soon turns yellow or straw color, then to brown, while the skin seems loose and flabby. Later the mass becomes thick and viscid, and turns dark brown, the color of coffee before any cream is added to it. It then dries up, and at last forms a thin layer over the bottom of the cell. While in the putrid coffee-colored state, if drawn out from the cell by inserting into it a pin-head, it is stringy, and if it fails to hold to the pin, it will fly back. This brown, stringy, elastic mass, with no resemblance to a larva or pupa, is, I think, a sure proof of the presence of the dread malady.

The larva may never be capped over, but if attacked late in its development, it usually will be. This cap, however, will appear sunken or concave, instead of being convex or rounding out as the cappings of brood always are when the brood is healthy. These sunken caps are always suspicious, and should always lead to close investigation. Little, irregular holes in the cappings are often observed, which also should awaken suspicion.

Another indication, not always marked in the early stages, is a rank smell, which has been compared to the odor of decaying brood that has been chilled. Often this odor, in severe cases, is very marked, and can be detected while the hive is closed, and several feet from the one perceiving it. I have had many samples of foul brood sent me, and often my children would speak of foul brood, detecting it by the odor, even before the package was opened.

We see, then, how we may surely determine if our bees have this terrible malady. If the bees languish, and we find the dark, stringy, salvy mass, which is elastic, in the cells; if many of the caps are sunken and pierced with irregular holes, then we may be sure of the presence of foul brood. If the foul, nauseating odor is present it will also aid in the determination; though it will not be very conclusive early in the attack, before the affection becomes extensive.

Mr. Cheshire thinks that the mature queen, workers and drones are also subject to attack, and frequently succumb to the disease. He thinks he has taken spores and the bacilli from the blood of the bees, and the spores from the eggs of the queen, which he took from the ovaries before the eggs were laid.

Senator R. L. Taylor, of our own State, President of the International Bee-Keepers' Association, who has had an extended experience with foul brood, and has conquered it, also thinks that it attacks the mature bees. If this be true, it is hard to explain the most satisfactory remedy, which on the hypothesis that the disease is confined to the brood, and the spores to the honey and cells, is very easily explained.

That the dry spores are not wafted by the wind from the hive, seems evident from the fact that colonies adjacent to diseased ones seem no more likely to contract the disease than those in distant parts of the bee-yard. This, in connection with the fact that robbing spreads the disease rapidly, seems to show that the contagion is carried in the honey.

PREVENTING AND CURING FOUL BROOD.

It goes without saying, that we should be very careful not to introduce combs, or honey from diseased colonies into our apiaries, or permit our bees to gain access to such comb or honey; neither is it best to get bees from foul-broody apiaries, for though it would seem that the bees cannot convey the malady, yet it might come in comb or honey.

For like reason, in case foul brood comes into our bee-yards, we must quarantine all diseased colonies, and spare no pains to prevent the bees from healthy colonies getting either at the honey or comb from the foul-broody hives. We must remember the subtle nature of the enemy, the vitality and minuteness of the spores, else we will not practice the caution necessary to prevent the spread of the disease.

Only the most extreme caution and painstaking, when foul brood is once introduced into an apiary, will prevent its spread to the entire apiary. Handling the bees at all, and especially if the bees are not gathering, and so will be fiercer to rob, is very likely to spread the disease. It is all-important that the apiarist knows the imminent danger of the disease spreading, in case it gains a foothold in his apiary, and regulate all his work accordingly.

REMEDIES FOR FOUL BROOD.

It is often suggested that all diseased colonies can be destroyed—either burned or buried—as soon as the disease is detected in an apiary. For the ignorant or careless, either or both, this is the wisest counsel. For the intelligent who will study into the matter fully, and practice the necessary caution, it is not wise or desirable. Two substances, long known as powerful fungicides, have been successfully used to conquer foul brood. One is a dilute solution of salicylic acid, the other a solution of carbolic acid.

Mr. Hilbert, of Germany, who was among the first to use salicylic acid, dissolved the powder in ten times its own weight of spirits, and one drop of this in one grain of water was used to spray the uncapped brood.

Mr. Muth mixes borax with the acid, when it is soluble in water. He uses 8 grains of each substance in one ounce of water. This is thrown on the diseased brood, and, to be effective, must of course touch every affected larva—every colony of the death-dealing bacillus. In actual practice, it seems so difficult to be absolutely thorough, that this remedy does not give satisfaction.

Mr. Bertrand has found success in fumigation, by heating salicylic acid and forcing the fumes over the un-

capped brood. The fault with this is the same as with spraying—unless *very thorough*, it fails of success. It is however well to mix this solution with honey or syrup, and feed it to the bees. This prevents the disease spreading so rapidly—simply holds it in check till cured.

The carbolic-acid remedy, although previously used with success, has been more thoroughly employed by Mr. Frank Cheshire than any one else. Mr. Cheshire sprays with a 1-50 solution of phenol-crystals of carbolic acid—and pours on and around the brood 1-500 solution of the same. The aim is to touch all diseased larvae with the solution, and also to feed the bees with medicated syrup, that spores and mature microbes may all be destroyed. Without doubt this remedy is good in theory, but like the salicylic acid, it is not usually satisfactory in practice. It is found to hold the disease—or the enemy—in check, but it often fails to exterminate it.

It would seem from the reports in America, even from our most careful men, that it is difficult to make this treatment sufficiently thorough to root out the disease. Like salicylic acid, so, too, carbolic acid, or phenol, as it is often called, is helpful to feed in syrup to the bees, as it seems to hold the malady in check; and also very excellent as a wash which the apiarist should always have at hand. After handling the combs of a foul-broody colony, the bee-keeper should at once wash his hands in a dilute solution of one of these substances, that he may run no risk of spreading the disease.

TRANSFERRING FOR FOUL BROOD.

Years ago that astute and justly renowned bee-keeper, Mr. Quinby, announced the "fasting method" to cure "foul brood." He drummed the bees out of their hive into any box, then placed them in a cellar till they were nearly famished of hunger, then he "run them" into a clean hive on untainted combs. With sufficient care, he found this invariably a sure cure.

Mr. D. A. Jones, Dr. A. B. Mason, and many others have confirmed this statement of the great New York bee-keeper. It would seem from this, that no disease or disease-germs could rest upon or dwell within the bees; that all must exist either in the honey, the brood, or in and about the cells. Of late, many bee-keepers have shown that the delay and fasting are not necessary. If the bees are simply "run into" clean, untainted hives, either upon foundation or empty frames, they escape the disease, and are cured. This would show that even if the honey is consumed before there

is young brood to feed, all danger is escaped—the colony is cured.

The best time to cure foul brood is during a honey-flow. Then there will be less danger of robbing, and, as we have seen, robbing is one of the most ready ways to spread the disease.

About four weeks before the probable end of the honey harvest, cage the queen inside the hive. As soon as the brood is all developed, place a new hive where the old one stood, filled with foundation, and shake the bees, queen and all, in front of this hive upon some paper that can be burned. This must be done under a bee-tent, or at nightfall when the bees have all ceased to fly. *We cannot be too careful to prevent spread of the contagion.*

Now burn the papers, extract the honey, and melt up the combs. The honey may be boiled and fed back to the bees; but if not boiled, great care must be taken that the bees *do not get any of it*. The old hive may be placed for some minutes in boiling water, or else burned. No bees must be permitted to visit it until it is boiled. If we discover affected colonies after the honey-flow, we had better leave them till a subsequent harvest, or till the next season. Else we must, by use of a bee-tent, distance or time—late in the day—be absolutely certain that in our manipulations no other bees are exposed.

When bees are idle and fierce to rob, the danger is so great that only the greatest caution would make it safe to attempt treatment out of the honey season. The object of caging the queen is, that it makes only one operation necessary, and so lessens the danger. In extracting the honey from the diseased colony, great caution is likewise required that no bees get to it, and so contract the disease. In case colonies are kept over for treatment until the next season, they should be fed the medicated syrup—salicylic-acid solution—inside the hive after nightfall, and every caution taken to prevent robbing. Bees must be kept away, or the disease will spread all through the apiary.

It seems strange that with the readiness of this malady, from its very nature, to spread, and with the bee-trees in the forest, which are beyond our control, that the malady once in a locality does not always remain there. The disease was once terribly virulent about Detroit, Toledo, Jackson, etc., yet now these localities are free from the plague. It seems that the disease dies out in time, just as cholera, yellow fever, etc., disappear. Why it lets go its grip, is not understood.

If the honey is not the bearer of germs, as Mr. Cheshire believes, it is hard to understand why feeding it so

rapidly spreads the disease. If the old bees and queen bear the germs, and are victims to the malady, as both Mr. Cheshire and Senator Taylor argue, it is hard to understand how the transferring remedy is so effective as all who have used it concede it to be.

THE NAMELESS BEE-DISEASE.

Within the past few years much complaint has been made by bee-keepers, of a disease among bees, which not only depleted the colony, but was made manifest by the appearance of the diseased bees. They look black, because of loss of hair, much as do robber bees, or old bees in spring, and frequently make strange motions in front of the hives, as though dancing or in convulsions. They are frequently dragged out of the hives by the other bees.

This, like foul brood, is supposed to be due to fungoid attack. In this, only the mature bees seem to become victims, though the inoculation appears to come through the queen. Thus it is found that superseding the queen with a healthy one, cures the malady. It is also reported that abundance of salt water placed close by the hives, where the bees can gain ready access to it, will cure this "nameless bee-disease."

It would seem that this malady is the same that has received attention in Europe, and which Mr. Cheshire has said was due to the attack of bacillus gaytoni.

Agricultural Coll., Mich., Apr. 15, 1890

BEE-FEEDERS.

Need of a Feeder for Winter and Spring Use.

Written for the American Bee Journal
BY S. J. YOUNGMAN.

Bee-keeping has made wonderful strides in the past quarter of a century. This was forcibly brought to my mind while recently talking with a gentleman living in Greenville, Mich., and well acquainted with some of its early history. He was speaking of Mr. Moon, who was trying to enlist interest in the Harbinson hive, in that vicinity. Having a knowledge and experience at that time far above the average bee-keeper, he soon had some of the business men interested, and he soon made a sale of the State of Minnesota, to Manning Rutan, a wealthy merchant, for a mile square, or 640 acres of pine timber land near Greenville. Although not very valuable at that time, if the timber was now standing, it would be worth \$200 per acre, or \$128,000. The hive used by him is still in existence, and in a good state

of preservation, and would be a good relic for the BEE JOURNAL Museum.

But I think that while some parts of bee-keeping are having more than their share of thought and consequent invention, other parts have been sadly neglected—for instance, the simple thing of spring feeding of bees, which is sometimes an actual necessity, and I believe it would pay to feed all colonies in early spring, if some cheap, simple and easy way was provided to do so. I think that if some of our inventive geniuses will carefully read the article by Robert Carver, on page 278, they will see a chance to construct a much-needed article for the modern apiary, namely, a good, handy, simple, cheap bee-feeder.

The frames of nearly all the hives in this latitude, at the time that the inmates need feeding, are covered with some kind of protection, either of chaff or cushions. Now nearly all bee-keepers will acknowledge that the bees should be fed on top of the frames, over the cluster. The facts are, that not one-tenth of the bees are fed when they should be, on account of these cushions, etc., being in the way, and with the style of feeders now in use, there is no way of getting to the frames without giving an outlet for the escape of the heat so much needed for brood-rearing at this time of the year.

This feeder can be made of tin or wood, or both; put on in the fall, with the tube protruding up through the packing, no heat can escape, and the feeder is in place, ready for use at any time.

Bees here in Michigan usually gather large quantities of pollen in autumn, and, if wintered outside, they commence breeding in March; but brood-rearing is often greatly retarded even in May, for the want of nectar during a cold spell. Although plentifully supplied with pollen, at these times they should be fed.

Bees wintered here on the summer stands in fine condition, and are breeding up and doing finely, although fruit-trees are not in bloom yet. Cellar-wintered bees are in bad condition, many having perished, and are dwindledd badly.

Lakeview, Mich., May 5, 1890.

SWARMS.

Self-Hivers and Swarm-Catchers —The Drone-Trap, etc.

Written for the American Bee Journal
BY HENRY ALLEY.

So much interest has been shown in self-hivers recently described in the bee-periodicals, I am sure that the readers of the AMERICAN BEE JOURNAL

will be interested in anything that is new, or even in an old device, provided it is made to do other work besides that for which it was originally designed.

Below I give a description of a new use for the drone-and-queen trap—an article thousands of the readers of the *AMERICAN BEE JOURNAL* must have in use. Those who have them in use, and have seen them catch a queen at swarming time, have noticed that when the bees returned after missing their queen, as many of them as could would crowd into the trap with the queen. The idea struck me that the trap might be made large enough to hold all the bees and the largest swarm when they issued.

Figure 1 shows the trap attached to a Bay State hive. You will see that it

for the bees to pass into the trap from the hive.

We stake our reputation as a bee-keeper on the statement that this trap will catch 99 out of every 100 swarms that issue. The queen will enter the trap, and when the bees return in search of her, they will readily find her ladyship in the box and ready to receive them.

You will notice in the trap (Fig. 2), and just ahead of the tubes, a strip of perforated metal. This is so arranged that it is exactly over the metal (A).

When the bees return after having missed their queen, they will pass into the trap through the metal and join their queen. Here the bees will be found on the return home of the apiarist, when they can be disposed of to suit his pleasure. If no hive is ready,

dition. The rest were wintered in the cellar, and were taken out in good condition at the first appearance of natural pollen.

My spring management commences now, and is something like this: I examine each colony to ascertain its immediate wants—first, to see if they have plenty of honey to last them for 2 or 3 weeks, and, if not, a comb of honey is given them; second, to see that no dead bees are lodged between the combs, and that they have a good, fertile queen.

In place of the Hill's device and the cotton cloth over the frames, I spread the enameled cloth over this 15 or 20 sheets of paper (in book form), then over all a 4-inch rim with a cloth bottom nearly filled with chaff. My object in doing this at this season of the year, is to prevent, as much as possible, the escape of heat and moisture, as both are essential in order to carry on brood-rearing successfully.

At the next examination, which should be done in 10 days or 2 weeks, I often find it necessary to remove such combs as the bees cannot well cover. It often happens that the hives do not contain more than 5 or 6 frames, with a close-fitting division-board at the side; in a short time these will be well filled with brood, and I then place in the center (if the weather is warm, and plenty of young bees are in the hive) a comb containing some honey; this I uncap, and continue to fill in, in this way, as they need room, until the 9 frames are well filled with brood. Some do not advise spreading the brood, but with a chaff-hive entrance well contracted, and covered warm on top, I have been successful.

With the above management, by June 1, the 42 colonies were overflowing with bees, and the combs nearly solid with brood.

A glance now at the brood-nest would show the apiarist that the swarming season was at hand. A few days later it commenced in earnest. Previous to last year I had been successful, after giving plenty of surplus room, by simply cutting out the queen-cells and returning the swarms. A few trials convinced me that this was a failure. Then I tried the following:

I hived swarms in hives that had cast swarms 4 or 5 days before; this did no better than the first. Next, I killed a few of the poorest queens at the time they swarmed, and at the same time I cut out all the queen-cells that were capped. Eight or nine days later (or after all the brood was capped), I again cut out all the queen-cells. Then I hived swarms in these hives, gave plenty of room, but all swarmed within 3 days.

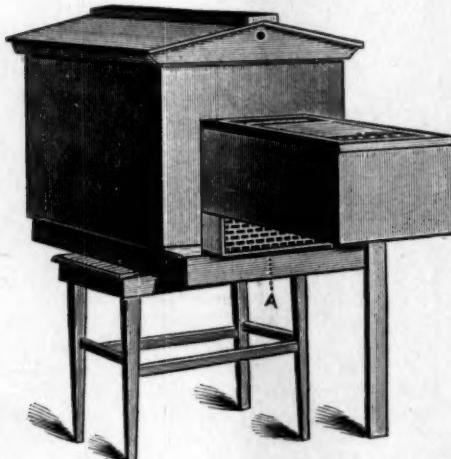


FIG. 1.—Trap Attached to a Hive.

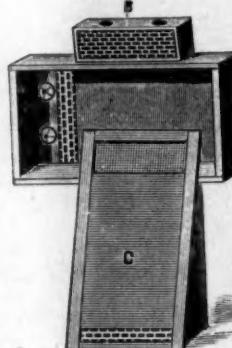


FIG. 2.—Our New Self-Hiver.

projects considerably beyond the front of the hive. The bees, to gain access to their hive, must pass under the trap and enter through the metal (A).

Figure 2 shows the interior of the Catcher. It is the same as the drone-trap. In fact, it is nothing but the drone-and-queen trap on a larger scale. Instead of being made just large enough to hold a pint of bees, the trap will hold the largest swarm likely to issue from any hive.

The trap has a portable cover (C), so that when a swarm has been hived, the bees can be quickly removed to a new hive. This device may be attached to the hive in a dozen different ways, to suit the fancy of the apiarist. It will be seen that there is a stake (D) driven in the ground under the front end of the trap, for the box to rest on.

B, as shown in Fig. 2, is a box, open on one side so that the bees can enter, while the opposite side is covered with perforated metal. This represents the bottom chamber of the drone-and-queen trap. Two cone-tubes are used

the box can be placed on the stand the bees are to occupy, and hived when most convenient. If the bees are to be returned to the hive they issued from, this can be done after the combs have been examined and the queen-cells removed.

Wenham, Mass.

MANIPULATION.

Management of Bees—Honey-Plants, etc.

Written for the American Bee Journal

BY C. RUSSELL.

I commenced the season of 1889 with 42 full colonies, to be worked for comb and extracted honey, and 5 weak colonies to be divided later in the season, for the fertilization of queens. Thirty colonies had been wintered on the summer stands, and as the winter had not been severe, when spring arrived they were in the pink of con-

Then again I introduced young laying queens to colonies that had been queenless eight or more days, and on examination a week or so later, I found they, too, had queen-cells well started. All this time they were making just about a living—some storing a little in the sections; but the weather was so wet that they could not do much except rear brood and swarm.

It was now about the first of July, and for nearly a month I had had the worst trial of swarming that I ever knew. I was quite sure now that nothing short of a good honey-flow would check this swarming fever; but with the force of workers then on hand, I expected a crop from the basswood, if the weather was favorable, for it was budded unusually full. A few days later it commenced down the valley at first, and, as the weather was favorable, they did about the best work of the season, and carried the honey a couple of miles.

The swarming had nearly ceased; the sections (30 $5\frac{1}{2} \times 5\frac{1}{2}$, or 50 pounds capacity) on each hive, perhaps would average one-half full. I ventured now to tier up about one-half of the very strongest colonies. The weather following was not quite what I wished it to be, but when it did clear up a little, they would show the same energy for storing honey that they had done at swarming. As the season advanced, I saw by their line of flight (which was towards a high, cold mountain) that the basswood season was of short duration. On examination, I saw that while some colonies had the sections all full and nearly capped, others would need more time than they would have from the basswood. The day following, in the forenoon, when most of the old bees were in the field, I removed the sections from such hives as had them nearly completed. These I placed near the entrance, and in a short time nearly all the bees had returned to their own hives.

Then from those with the partly-filled sections, I removed bees and all, and placed on the hives of the former. This, as will be seen, gave them nearly a double working-force on the partly-filled sections, and while they were being filled very rapidly, the ones nearly capped were being completed on the colonies from which I had taken the partly-filled ones.

When the above is practiced, both colonies should have a fertile queen, or fighting would be the result. I practice nearly the same plan with those that are a little slow to enter the sections.

As the buckwheat season was fast approaching, I removed the white honey from the hives, and found

nearly all of the sections well filled. I had over 3,200 pounds of comb and extracted honey, three-fourths of which was comb.

On account of the wet weather again I did not secure as much buckwheat honey as I sometimes have done, but I had something over 1,000 pounds. This made the average yield a trifle over 100 pounds per colony.

HONEY-PLANTS FOR BEES.

Although I have secured only three crops in the past eight years from the basswood, I must place this at the head of the list, for I never have been able to make a very good showing without it. It blossomed quite well here in 1888, and while some got quite a crop, even in this county, it was an entire failure here.

The buckwheat I have never known to fail to produce some honey—I think I have taken as high as 40 or 50 pounds per colony from it. The honey being dark, it usually sells for 4 or 5 cents per pound less than the white.

We have considerable white clover here, but as yet I have seen only one good yield from it. The raspberry produces some honey nearly every season.

About Sept. 1, of last season, there was considerable honey gathered from the golden-rod. I have never known bees to work on it only one season before. This may be on account of the early frosts we usually have here.

IMPORTANCE OF GOOD QUEENS.

I consider the queen the most important factor in successful bee-keeping, and I have had excellent results with crossing the best Italian strains, and from such a cross last season I obtained 150 pounds each, of comb honey, from a few choice colonies. An examination of the slates showed that all these queens were sisters. Now while I have had queens do good business at four years of age, I have had them fail early in the season at three years; and by so doing, have about ruined the white honey crop of the season; for if ever I want a queen at her best, it is through the month of May.

I will say by way of summing up, that most of my young queens are kept in strong nuclei (of which I had over 20 from the 5 weak colonies first mentioned), until near the end of the honey season; then, after introducing to full colonies, they are kept two years, and no more unless selected for queen-mothers.

When I used to let the bees supersede their queens, although one-fourth or less of the hives would contain old queens, it often happened that 50 or 75 per cent. of my weak colonies in the

spring would contain queens of this sort.

I intended to give my method of queen-rearing, but this article is already too long. I know that the above is not all "according to the books," but it is what I practice in this locality.

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will be interested in anything that is new, or even in an old device, provided it is made to do other work besides that for which it was originally designed.

Below I give a description of a new use for the drone-and-queen trap—an article thousands of the readers of the **AMERICAN BEE JOURNAL** must have in use. Those who have them in use, and have seen them catch a queen at swarming time, have noticed that when the bees returned after missing their queen, as many of them as could would crowd into the trap with the queen. The idea struck me that the trap might be made large enough to hold all the bees and the largest swarm when they issued.

Figure 1 shows the trap attached to a Bay State hive. You will see that it

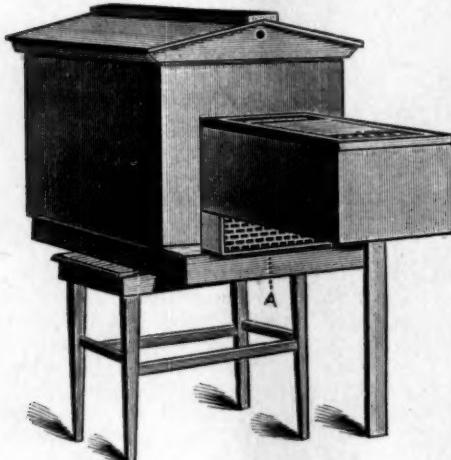


FIG. 1.—Trap Attached to a Hive.

projects considerably beyond the front of the hive. The bees, to gain access to their hive, must pass under the trap and enter through the metal (A).

Figure 2 shows the interior of the Catcher. It is the same as the drone-trap. In fact, it is nothing but the drone-and-queen trap on a larger scale. Instead of being made just large enough to hold a pint of bees, the trap will hold the largest swarm likely to issue from any hive.

The trap has a portable cover (C), so that when a swarm has been hived, the bees can be quickly removed to a new hive. This device may be attached to the hive in a dozen different ways, to suit the fancy of the apiarist. It will be seen that there is a stake (D) driven in the ground under the front end of the trap, for the box to rest on.

B, as shown in Fig. 2, is a box, open on one side so that the bees can enter, while the opposite side is covered with perforated metal. This represents the bottom chamber of the drone-and-queen trap. Two cone-tubes are used

for the bees to pass into the trap from the hive.

We stake our reputation as a bee-keeper on the statement that this trap will catch 99 out of every 100 swarms that issue. The queen will enter the trap, and when the bees return in search of her, they will readily find her ladyship in the box and ready to receive them.

You will notice in the trap (Fig. 2), and just ahead of the tubes, a strip of perforated metal. This is so arranged that it is exactly over the metal (A).

When the bees return after having missed their queen, they will pass into the trap through the metal and join their queen. Here the bees will be found on the return home of the apiarist, when they can be disposed of to suit his pleasure. If no hive is ready,

dition. The rest were wintered in the cellar, and were taken out in good condition at the first appearance of natural pollen.

My spring management commences now, and is something like this: I examine each colony to ascertain its immediate wants—first, to see if they have plenty of honey to last them for 2 or 3 weeks, and, if not, a comb of honey is given them; second, to see that no dead bees are lodged between the combs, and that they have a good, fertile queen.

In place of the Hill's device and the cotton cloth over the frames, I spread the enameled cloth over this 15 or 20 sheets of paper (in book form), then over all a 4-inch rim with a cloth bottom nearly filled with chaff. My object in doing this at this season of the year, is to prevent, as much as possible, the escape of heat and moisture, as both are essential in order to carry on brood-rearing successfully.

At the next examination, which should be done in 10 days or 2 weeks, I often find it necessary to remove such combs as the bees cannot well cover. It often happens that the hives do not contain more than 5 or 6 frames, with a close-fitting division-board at the side; in a short time these will be well filled with brood, and I then place in the center (if the weather is warm, and plenty of young bees are in the hive) a comb containing some honey; this I uncap, and continue to fill in, in this way, as they need room, until the 9 frames are well filled with brood. Some do not advise spreading the brood, but with a chaff-hive entrance well contracted, and covered warm on top, I have been successful.

With the above management, by June 1, the 42 colonies were overflowing with bees, and the combs nearly solid with brood.

A glance now at the brood-nest would show the apiarist that the swarming season was at hand. A few days later it commenced in earnest. Previous to last year I had been successful, after giving plenty of surplus room, by simply cutting out the queen-cells and returning the swarms. A few trials convinced me that this was a failure. Then I tried the following:

I hived swarms in hives that had cast swarms 4 or 5 days before; this did no better than the first. Next, I killed a few of the poorest queens at the time they swarmed, and at the same time I cut out all the queen-cells that were capped. Eight or nine days later (or after all the brood was capped), I again cut out all the queen-cells. Then I hived swarms in these hives, gave plenty of room, but all swarmed within 3 days.

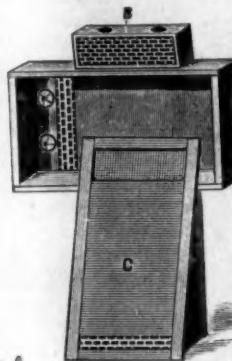


FIG. 2.—Our New Self-Hiver.

the box can be placed on the stand the bees are to occupy, and hived when most convenient. If the bees are to be returned to the hive they issued from, this can be done after the combs have been examined and the queen-cells removed.

Wenham, Mass.

MANIPULATION.

Management of Bees—Honey-Plants, etc.

*Written for the American Bee Journal
BY C. RUSSELL.*

I commenced the season of 1889 with 42 full colonies, to be worked for comb and extracted honey, and 5 weak colonies to be divided later in the season, for the fertilization of queens. Thirty colonies had been wintered on the summer stands, and as the winter had not been severe, when spring arrived they were in the pink of con-

Then again I introduced young laying queens to colonies that had been queenless eight or more days, and on examination a week or so later, I found they, too, had queen-cells well started. All this time they were making just about a living—some storing a little in the sections; but the weather was so wet that they could not do much except rear brood and swarm.

It was now about the first of July, and for nearly a month I had had the worst trial of swarming that I ever knew. I was quite sure now that nothing short of a good honey-flow would check this swarming fever; but with the force of workers then on hand, I expected a crop from the basswood, if the weather was favorable, for it was budded unusually full. A few days later it commenced down the valley at first, and, as the weather was favorable, they did about the best work of the season, and carried the honey a couple of miles.

The swarming had nearly ceased; the sections (30 $5\frac{1}{2} \times 5\frac{1}{2}$, or 50 pounds capacity) on each hive, perhaps would average one-half full. I ventured now to tier up about one-half of the very strongest colonies. The weather following was not quite what I wished it to be, but when it did clear up a little, they would show the same energy for storing honey that they had done at swarming. As the season advanced, I saw by their line of flight (which was towards a high, cold mountain) that the basswood season was of short duration. On examination, I saw that while some colonies had the sections all full and nearly capped, others would need more time than they would have from the basswood. The day following, in the forenoon, when most of the old bees were in the field, I removed the sections from such hives as had them nearly completed. These I placed near the entrance, and in a short time nearly all the bees had returned to their own hives.

Then from those with the partly-filled sections, I removed bees and all, and placed on the hives of the former. This, as will be seen, gave them nearly a double working-force on the partly-filled sections, and while they were being filled very rapidly, the ones nearly capped were being completed on the colonies from which I had taken the partly-filled ones.

When the above is practiced, both colonies should have a fertile queen, or fighting would be the result. I practice nearly the same plan with those that are a little slow to enter the sections.

As the buckwheat season was fast approaching, I removed the white honey from the hives, and found

nearly all of the sections well filled. I had over 3,200 pounds of comb and extracted honey, three-fourths of which was comb.

On account of the wet weather again I did not secure as much buckwheat honey as I sometimes have done, but I had something over 1,000 pounds. This made the average yield a trifle over 100 pounds per colony.

HONEY-PLANTS FOR BEES.

Although I have secured only three crops in the past eight years from the basswood, I must place this at the head of the list, for I never have been able to make a very good showing without it. It blossomed quite well here in 1888, and while some got quite a crop, even in this county, it was an entire failure here.

The buckwheat I have never known to fail to produce some honey—I think I have taken as high as 40 or 50 pounds per colony from it. The honey being dark, it usually sells for 4 or 5 cents per pound less than the white.

We have considerable white clover here, but as yet I have seen only one good yield from it. The raspberry produces some honey nearly every season.

About Sept. 1, of last season, there was considerable honey gathered from the golden-rod. I have never known bees to work on it only one season before. This may be on account of the early frosts we usually have here.

IMPORTANCE OF GOOD QUEENS.

I consider the queen the most important factor in successful bee-keeping, and I have had excellent results with crossing the best Italian strains, and from such a cross last season I obtained 150 pounds each, of comb honey, from a few choice colonies. An examination of the slates showed that all these queens were sisters. Now while I have had queens do good business at four years of age, I have had them fail early in the season at three years; and by so doing, have about ruined the white honey crop of the season; for if ever I want a queen at her best, it is through the month of May.

I will say by way of summing up, that most of my young queens are kept in strong nuclei (of which I had over 20 from the 5 weak colonies first mentioned), until near the end of the honey season; then, after introducing to full colonies, they are kept two years, and no more unless selected for queen-mothers.

When I used to let the bees supersede their queens, although one-fourth or less of the hives would contain old queens, it often happened that 50 or 75 per cent. of my weak colonies in the

spring would contain queens of this sort.

I intended to give my method of queen-rearing, but this article is already too long. I know that the above is not all "according to the books," but it is what I practice in this locality.

In regard to my bee-escape, illustrated on page 211. I will say that if a one-inch hole through the tin at A A (where the bees enter the escape) be too small, this could be made any size; and should there be any objection to the inner triangle being made of wood (which I do not think there will be), this could easily be made of a strip of tinned wire-cloth, with a little of its edge turned at right angles, to be soldered to the tin before this is nailed to the top of the escape-board.

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CONVENTION DIRECTORY.

1890. Time and place of meeting.

July 17.—Carolina, at Charlotte, N. C.
N. P. Lyles, Sec., Derita N. C.
Sept. 10.—Ionia County, at Ionia, Mich.
H. Smith, Sec., Ionia, Mich.

In order to have this table complete, Secretaries are requested to forward full particulars of the time and the place of each future meeting.—THE EDITOR.

International Bee-Association.

PRESIDENT—Hon. R. L. Taylor, Lapeer, Mich.
SECRETARY—C. P. Dadant Hamilton, Ills.

National Bee-Keepers' Union.

PRESIDENT—James Heddon, Dowagiac, Mich.
SEC'Y. AND MANAGER—T. G. Newman, Chicago.

**Splendid Prospects for a Crop.**

We have a splendid prospect for a good honey crop. White clover is all we count on for surplus. I have 80 colonies of bees in good condition for the time of year. I put about 2 bushels of sawdust around each hive, to keep down grass and weeds. Is it a good idea? I have a good home market—never send any honey away. I read the BEE JOURNAL more and more.

ED. GOFF.

Ashland, Ills., May 8, 1890.

Good Prospects for White Clover

So far as heard from, 85 per cent. of the bees in Green county, Ohio, have wintered well. We have just passed 10 days of cold, rainy weather, accompanied with strong cold winds. Brood and drones are perishing by the thousands. No doubt bees that are neglected, will starve before clover blooms. The prospects for white clover are good. I have 56 colonies ready for the harvest, to-day.

C. E. WOODWARD.
Xenia, O., May 12, 1890.

Examining Colonies in Spring.

Generally about the first week in May, I go over the entire apiary and examine the condition of each colony, and make a note of it in a small book, all the hives being numbered. This examination I make just as soon as all danger of wintering is passed. Those colonies that I find have plenty of honey and bees, I note down as in "good condition;" colonies that are weak in bees and short of stores are classed as "weak and need attention." This latter class includes all queenless colonies, and those that need help in any way. This record, if properly kept, will show valued information, and at any time the number of colonies the bee-keeper owns, and the condition of every hive in the apiary from year to year, without the trouble of examining each and every hive every few days. About $\frac{1}{2}$ of all the bees are dead in this locality—mostly due from starvation. The winter has been a mild one, but bees did not obtain honey sufficient during the fall months to last them through. We have lost quite a number in summer hives, but very few from those that were wintered in chaff hives.

J. M. YOUNG.
Plattsmouth, Neb., May 8, 1890.

Condition of Bees in Maine.

With the exception of one weak, feeble colony, and 2 that are queenless, my 61 colonies of bees have wintered admirably. The queenless colonies are rearing queens, which will be ready for duty as soon as the drones, now beginning to emerge, are old enough to perform their functions. The lost colony was the remnant of a colony that was robbed last spring, and were probably queenless when put into winter quarters, and should have been united with another colony; but as it was too late to do so when I got to them, I concluded to let them go on the "hit or miss" system. My bees are in the winter packing yet, and will probably remain so a week or two longer, if Spring does not assume a more genial countenance than that with which we have been greeted to this date. At present the outlook for a bountiful honey crop is certainly not propitious, and a change for the better must come soon, or the bee-industry in this section, the coming season, will be a repetition of the three seasons preceding.

J. F. LATHAM.
West Cumberland, Me., May 12, 1890.

An Experience with Bees.

The winter loss of bees in this vicinity was less than 5 per cent., and there has been no spring dwindling. Though the spring has been cold and windy, the bees have reared brood well. My neighbor had a swarm on April 30, which did well. The weather has been very unfavorable during fruit-bloom, and bees that were short of stores have required feeding. I am nearly 60 years old, and all my life I have given bees a wide berth, until 3 years ago a bee-friend slipped a colony into my yard when I was not at home. For one year I respected them from a distance, for my friend's sake, but got no honey or increase; the next year it was the same, but the third year there was signs of a boom among the bees. I began to read the BEE JOURNAL, became interested, and ventured a little closer to the hive, and soon began to handle the bees, when friendship soon ripened into love. Next I got a few frames of honey, which pleased my wife, and when fall came I had secured over 100 pounds of honey, and put 5 colonies into winter quarters. I am now the worst "bee-crank" in Indiana.

J. A. C. DOBSON.
Brownsburg, Ind., May 10, 1890.

Small Loss in Wintering.

Bees are doing well in this locality this spring. There was very little loss the past winter. Those wintered on the summer stands, packed in chaff, were the strongest, and have bred up the most rapidly. Of 10 colonies packed in chaff, we lost one that had lost their queen during the winter, and had to be united with another colony this spring. Of the remaining 9 colonies, one cast a swarm on May 8, 6 more need watching every nice day, while the other two are strong colonies.

Out of 22 wintered in the cellar, we lost two, one of which was a 3-frame nucleus of Carniolan bees, with an untested queen, which we bought last fall, intending to build them up into a good colony before winter; but although we fed them, and they worked well, the queen did not lay, and so, instead of a strong colony to put into winter quarters, we had only a nucleus that died before the time to take them out of the cellar. The other colony that died, was one of the best and heaviest ones we had. This leaves us 29 out of 32 colonies to begin this season with.

Fruit-trees are very full of bloom, and if the nights were not so cold (there being

hard frosts about every other night for the past two weeks) bees would just roll in the honey. Still, we should not find fault with such small drawbacks, when we have so many things in our favor. Bee-keepers around us report their colonies strong, but no swarms yet, so we think that we can score the first swarm in this neighborhood, for this season. J. W. BUCHANAN & BRO.
Eldora, Iowa, May 11, 1890.

Backward Spring—White Clover

We are having a very backward spring here—wet and cold. Bees are in good condition, but they are short of stores. Fruit trees are beginning to bloom, and the bees are at work to-day. I have two small apiaries about one mile apart—27 colonies in one, and 23 in the other; one colony is queenless, leaving 49 in good condition. White clover never looked better.

B. W. PECK.

Richmond Centre, O., May 12, 1890.

First Bees—Extracting Honey.

Bees were first noticed in their wild state as we read of the Children of Israel using honey in their sacrifice before the Tabernacle of the Lord. Races were not known then as now—that was left for man to develop. Man, in the course of time, saw either by accident, or understand that honey oozing from the comb was good. Webster says that "extract" means "to take from;" wax, in itself, is not very palatable to some, hence a desire to get honey in its pure state. In this progressive age, where everything is developed as fast as Yankee, or any other nationality, can devise the thought of profit, or "How much can I make it pay?" is looked at from all sides. Bees will produce so much more honey if the extractor is used. What delights a bee-keeper's heart more than to see the golden mass roll or run into his receptacles! Who does not love the essence of sweetness confined in the midst of this transparent liquid? As a medicine, nothing can equal it; as for food, is it not the nectar of the gods?

Valparaiso, Ind. MRS. E. M. CASBON.

Old Colonies of Bees.

Last fall I had 19 colonies, and my mother had 3; 21 came through the winter, one light colony belonging to me, having died, but the rest are in good condition. They were put in with lots of honey (fall honey, at that), but as they had a chance for a flight once in awhile, they came out all right. I have bought 5 colonies, so we now have 26. This is the best result that I have had in wintering bees for a number of years. Bees will winter on fall honey, if they have a chance to fly occasionally.

I had three kinds of chaff hives on trial the past winter—one a Root, one chaff Eclectic, and 18 Falconer's chaff hives. The colony in the Root hive seems to be a little the strongest, although some of the others are nearly equal to it; the balance of the colonies, excepting one, were in Langstroth hives, packed in chaff, and they wintered in very good condition.

The old colony of bees which I call the "Old Veteran," is still as good as ever. It will be 20 years old on June 20. I saw drones flying at this hive on May 2. I gave a description of the "Old Veteran" on page 316 of the AMERICAN BEE JOURNAL for 1889; and on page 745 of the same volume is an article giving the history of an old colony of bees owned by G. W. Rosenberger, of Rosendale, Va., which is called the "Queen of Rosendale." I received a letter from Mr. Rosenberger recently, in

which he said: "I had 64 colonies last fall on the summer stands, and I have lost only one, the rest appearing to be in good condition. The 'Queen of Rosendale' is just as good as the best of them, and is 50 years old the coming summer." If any readers of the BEE JOURNAL know any other colony 50 years old, in the same hive that they were first put in, and have the same comb that was built by them the first season, I would like to hear from them in the BEE JOURNAL.

J. S. BARD.

Oakfield, O., May 9, 1890.

Wintering Bees.

Having wintered honey-bees in this cold climate for 12 years, I have tried all kinds of schemes to bring them through without loss, or the least loss, and I find that a cellar is the best of all; keep it dark, so that no light can be seen by the bees. Give upward ventilation to the hive, so that the vapor arising from their breath will not form water, and run down into the bees and combs which will wet and destroy them. Avoid noise overhead, as much as possible, or the bees will be cross in the spring. They consume less stores in the cellar, where it does not freeze, as they do not have to eat to make heat, as out-doors, and do not get so full before spring. I put all into the cellar last fall, and suffered less loss than usual.

I thought that a chamber was a good place to winter bees, being warm and dry; so I put in 2 colonies, corked them up with rags, and put wire-cloth over the entrance; they gnawed out, and the mice probably helped some, too. The bees stung the children in the beds, and behaved so badly that I concluded to move the worst ones. I got a neighbor to help one day, and we dug a hole in the snow near a hive outdoors—the snow was 2 feet deep; I went ahead, backed down the stairs, the neighbor let go, and bee-hive and I were piled up, down in the stairway, with the bottom-board off, as well as the cap, and about a quart of bees out. I was stung a number of times; however, we gathered them up as best we could, and buried them in the hole in the snow—hive and all; they came out all right in the spring, and were as good as any of the others. Those left in the chamber, the moths destroyed in the spring.

E. G. SLAYTON.

Chetek, Wis.

Correction—Dry Weather.

In my reply to Query 706, I am made to say, "I think so." It should have been, "I think not," as that is according to my experience.

Bees came through the winter in fair condition. The weather has not been very favorable for a fine honey-yield—too dry. We had a nice shower to-day—the first rain for a month.

EUGENE SECOR.

Forest City, Iowa, May 9, 1890.

[It was a typographical error on the part of the printer, and escaped our notice. Mr. Secor had it written as he wanted it.—Ed.]

An Extension, Reversible Hive.

Many bee-keepers think that they can make the best hive, so I have tried it, too. Not being satisfied with the movable frame for extracted honey, I wanted a hive that could be manipulated more easily, and stand the wear. So I make the hive with a front and back board just alike. Every thing is perfectly interchangeable. The ends of the frames are rabbeted so as to make a tight fit. All are held together by a bar on each side, passed through a loop,

and four pins hold it tightly together. Now this hive works as well bottom side up, as right side up.

When the brood apartment is full enough of bees, and more room is needed, turn another hive bottom side up, on top, and when more room is wanted, split the hive open, and put in what frames are needed. If 5 frames are put in the bottom, and 5 in the top, then it makes a handsome cube. I use 10 frames to the hive; 30 frames are generally enough to prevent swarming. They seldom fill 40. A frame of sealed honey weighs from 7 to 8 pounds.

This hive can be made into a long extension hive so easily, if desired. The double-up hive can be opened as easily as the single hive. Another advantage is, no matter how large a swarm you may have, or how many swarms go together, you can make a hive to fit in a minute. Another advantage is, the bee-keeper does not have to watch his apiary so closely for fear he will lose some swarms. The apiarist can let extracting go until the end of the season. The hive is readily reduced down to the size of a dwindled colony.

Now whether other bee-keepers will find so many good things about it, I do not know. Using it will prove it. I have used it for 15 years, and would not give it for any hive I am acquainted with. A similar hive may have been invented a half dozen times, and thrown away as useless, for ought I know; but for me, it is *par excellence*. Its name is, "Extension, Reversible, Non-Swarming Hive." I would like to hear how many have tried a similar hive, and their objections to it. J. BLANCHARD.

What Ailed the Bees?

Mr. Julius J. Petty, on page 284, asks for the symptoms of disease in my bees. In almost every case, the symptoms all came just at the close—death—nothing more. In a few cases of the blacks, I found that the bees presented the wet, greasy appearance that Mr. Petty speaks of. They would crawl over the combs aimlessly, and the combs, tops of the frames, and sides of the hives were badly stained and wet. I think that in every case the honey that the bees had to eat, was nice and clean. There are no cider-mills in the county, and no fruit; the honey is gathered from clover, basswood and golden-rod. On some of the bottom-boards I found water and a quantity of dead bees. Over some of them I had burlap, and over others enameled cloth. Those having the burlap were free from moisture.

At no time during the winter was the mercury below freezing, and it was not damp, but I found some mold. In some of the hives there was over 20 pounds of nice honey. The Italians and hybrids seemed to just die, without any cause. In one case they were clinging to 3 frames of nice honey; this was a new colony, and the combs were new and white. The bees were clean, and there was apparently no cause for their death. I am puzzled.

AKED D. ELLINGWOOD.
Milan, N. H., May 7, 1890.

Chapman Honey-Plant Seed.

This plant has been commended by some of the most experienced bee-keepers in America, as being "a most valuable acquisition to the list of bee-forage plants." The seed may be scattered in waste places, or it may be sown in drills or hills like onion seed. We can furnish the seed, postpaid, at the following prices: Single ounce, 40 cents; 4 ounces, \$1.00; 10 ounces, \$2.00; or one pound for \$8.00.



ALFRED H. NEWMAN,
BUSINESS MANAGER.

Business Notices.

Subscribers who do not receive their papers promptly, should notify us at once.

Money in Potatoes, by Mr. Joseph Greiner. Price, 25 cents, postpaid. For sale at this office.

Send us one NEW subscriber, with \$1.00, and we will present you with a nice Pocket Dictionary.

Red Labels are nice for Pails which hold from 1 to 10 lbs. of honey. Price \$1.00 per hundred, with name and address printed. Sample free.

Calvert's No. 1 Phenol, mentioned in Cheshire's Pamphlet on pages 16 and 17, as a cure for foul brood, can be procured at this office at 25 cents per ounce, by express.

The date on the wrapper-label of this paper indicates the end of the month to which you have paid. If that is past, please send us a dollar to advance that date another year.

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HONEY AND BEESWAX MARKET.

NEW YORK, May 6.—Comb Honey is well cleaned up, with the exception of California 2 lbs., which sell at 10@11c per lb. Extracted is dull at 7c for California, white clover and basswood; Southern, 70@75c per gallon. Beeswax, scarce at 27@28c.

HILDRETH BROS. & SEGELKEN,
28-30 West Broadway.

CHICAGO, May 2.—Receipts of honey are light, and demand fair for choice white clover at 13@14c. Other grades are dull and neglected. Extracted, 6@7c. Beeswax, bright, 25@26c.; dark, 23@24c.

S. T. FISH & CO., 189 S. Water St.

KANSAS CITY, April 25.—Market is cleaned up on comb honey. We quote: White 1-lbs., 14c.; 2-lbs., 13c. Dark 1-lbs., 10@12c.; 2-lbs., 10@11c. Extracted is very dull sale at 5@7c. No Beeswax in the market.

CLEMONS, CLOON & CO.,
Cor. 4th and Walnut Sts.

CHICAGO, May 1.—Comb honey sells soon after arrival, if white and otherwise desirable, at 12, 13 and 14c; dark comb is slow at 8@10c. Weather is cool and seemingly favorable to its sale. Extracted, 6@8c, according to quality; some with no distinct flavor has sold at 5c. Beeswax—Yellow, about 27c; fancy, 28c; supply light. R. A. BURNETT, 1618 Water St.

MILWAUKEE, May 1.—Demand for honey is rather light. Supply is ample, of both comb and extracted. We quote: Best white 1-lbs., 13@14c; medium 1-lbs., 11@12c; common old 1-lbs., 9@10c. Extracted, white, in barrels and half-barrels, 7@8c; dark, in barrels and half-barrels, 6@6½c. Beeswax, 25@26c; supply light. A. V. BISHOP, 142 W. Water St.

KANSAS CITY, May 2.—The honey market is cleaned up. We quote: 1-lbs. white, 12@13c.; 2-lbs. white, 10@11. Dark 1-lbs., 8@10c.; dark 2-lbs., 8@9c. Extracted, white, 6@6½c.; dark, 5c. Demand good. Waiting for the new crop.

HAMBLIN & BEARSS, 514 Walnut St.

DENVER, May 5.—One-pound sections, 14@16c; extracted, 7@9c. Demand good and supply likely to be exhausted before the new crop comes in. Beeswax, 22@25c.

J. M. CLARK COM. CO., 1517 Blake St.

DETROIT, May 2.—Comb honey is selling slowly at 10@13c. Extracted, 7@8c. Beeswax, scarce at 26@27c.

M. H. HUNT, Bell Branch, Mich.

CINCINNATI, May 1.—Demand is slow for comb honey at 10@14c. No choice white on the market. Extracted is in good demand at 5@8c. Stock is low.

Beeswax is in good demand at 22@26c, for good to choice yellow. C. F. MUTH & SON, Corner Freeman & Central Aves.

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